

To: Board of Directors

Date: 02/07/2017

From: Anne Muzzini Director of Planning

Reviewed by:

SUBJECT: Cover Memo - Fixed Route Productivity

Background:

One of the goals identified by Board of Directors is to improve system-wide route productivity. Staff prepared the attached fixed route productivity analysis, which was presented to the Operations and Scheduling (O&S) Committee, for discussion. The measure calculated in this analysis is “cost per passenger”. Routes are ranked based on the cost per passenger, ranging from \$0 to \$20.65.

Given the results from this data, staff can identify the least productive routes and begin the process of restructuring the system as a whole. This process will allow staff to reallocate revenue hours from unproductive service to more productive service. It is understood that some recommendations may leave certain communities without a fixed route; however, they may be better served with alternative modes of transportation, such as those under the umbrella of shared mobility.

Recommendation:

This item is for informational purposes only. No action is required at this time.

Financial Implications:

None.

To: Board of Directors

Date: 02/3/2017

From: Anne Muzzini, Director of Planning and Marketing

Reviewed by:

SUBJECT: Fixed Route Productivity

Background:

The Measure X sales tax measure would have given the Authority a chance to enhance service frequency without cutting or redistributing service. Without new funding the only way to increase productivity and/or frequency on BART feeder routes is to move service from the low end of the range and redeploy it to routes on the high end of the range of performance.

At the last O&S meeting, the Director of Planning and Marketing described a strategy where the first step in re-tooling the routes would be to create service alternatives that were less expensive than the low performing fixed route service such as taxi and Uber/Lift subsidies and/or in-house operated door to door service using dynamic scheduling. For instance, instead of paying \$20.65 per passenger on Route #2 you could subsidize passengers \$5 per trip to take a taxi.

While working to create service alternatives, staff has begun to evaluate the relative performance of routes using cost per passenger as the measure. Cost per passenger is a good indicator because it reflects ridership and thus fare revenues, as well as subsidies by special contracts, and route cost.

Summary:

County Connection offers 55 weekday routes and 11 weekend routes. Of the 55 weekday routes, 19 are school tripper routes, 7 express routes, and 3 special shuttles (St. Mary's, Cal State East Bay and Alamo Creek).

All of the shuttle services have their separate funding stream and are completely paid for by the supporting entity. For example, Contra Costa County provides the funding to run the Alamo Creek service. Therefore, the cost per passenger to County Connection is \$0. Additionally, some of the free fixed routes, such as Route 4, have fare revenues paid through a contract. In this case, the remaining cost per passenger is \$2.11.

The tables that follow show the details behind the development of the cost per passenger for each route, rank routes by cost per passenger, and show what a \$5.00 cost per passenger cut-off would look like. This is for demonstration purposes only to show the range of cost per passenger and a potential policy and its results. If routes

below a certain cut off point are eliminated (to be replaced with some service alternative that costs less) then those hours could be redeployed onto routes that serve major corridors and feed BART with high frequency. In other words eliminate costly routes and allocate those resources to more productive service.

Based on our analysis, there are 21 routes that have a cost exceeding \$5/passenger and 8 routes exceed \$10/passenger. Routes that are costing more than \$5 per passenger utilize 92,426 service hours, about 38% of all weekday hours. Reallocating this number of hours would create a very different system, but one that provides frequent direct service to BART in corridors with high transit ridership. Historically County Connection has tried to provide coverage to a large suburban area and has not focused on short direct and frequent feeder routes to BART. Routes that do this are the most productive in the system. Routes that are long and circuitous and infrequent are not productive.

The 2016-2025 Short Range Transit Plan (SRTP) included a proposal for a 15-minute BART feeder Network to overlay our current system. This was the basis for the Transportation Expenditure Plan (TEP) request. The additional hours required to implement it would be 76,245 hrs/year on the weekday service and 42,000 hours/year on the weekend service. If service hours were re allocated from costly routes to the 15 minute feeder network, there would be an increase in overall system productivity.

Routes Ranked by Cost/Passenger

	Route	Passengers	Bishop Ranch Passengers	BR Fares (\$2.23/pass)	Special Contract Revenues	Passengers Paying Their Fare	Fare from Everyone Else	Total Fares, Contract Fares, BR	Total Miles	Total Hours	Marginal Cost (1.81/mile & \$54.26/hour)	Cost Less Fares, Contract, BR	Cost per Passenger
Weekday													
1	250 *	1,477			\$57,715			\$57,715		438	\$57,715	\$0	\$0.00
2	260 *	2,579			\$101,675			\$101,675	27,966	2,307	\$101,675	\$0	\$0.00
3	Alamo Creek *	5,366			\$162,498			\$162,498	60,414	2,560	\$162,498	\$0	\$0.00
4	649	139			\$25,730	139	\$153	\$25,883	5,067	308	\$25,883	\$0	\$0.00
5	627	14,272	3	\$7		14,269	\$15,696	\$15,703	4,119	385	\$28,345	\$12,643	\$0.89
6	613	7,570				7,570	\$8,327	\$8,327	1,354	307	\$19,109	\$10,782	\$1.42
7	611	15,734				15,734	\$17,307	\$17,307	4,607	587	\$40,189	\$22,882	\$1.45
8	615	5,663				5,663	\$6,229	\$6,229	1,210	255	\$16,026	\$9,797	\$1.73
9	619	6,957	1	\$2		6,956	\$7,652	\$7,654	1,829	314	\$20,348	\$12,694	\$1.82
10	4	212,999			\$180,000			\$180,000	53,167	9,832	\$629,717	\$449,717	\$2.11
11	10	299,493	1,702	\$3,795		297,791	\$327,570	\$331,366	152,414	12,760	\$968,227	\$636,861	\$2.13
12	20	294,354	1,456	\$3,247		292,898	\$322,188	\$325,435	98,678	14,759	\$979,431	\$653,996	\$2.22
13	5	127,336			\$54,999			\$54,999	49,812	5,485	\$387,776	\$332,777	\$2.61
14	602	26,297	31	\$69		26,266	\$28,893	\$28,962	19,031	1,292	\$104,550	\$75,588	\$2.87
15	612	8,259				8,259	\$9,085	\$9,085	6,436	416	\$34,221	\$25,136	\$3.04
16	614	7,289				7,289	\$8,018	\$8,018	4,970	396	\$30,483	\$22,465	\$3.08
17	14	165,516	1,594	\$3,555		163,922	\$180,314	\$183,869	75,664	10,442	\$703,535	\$519,666	\$3.14
18	11	81,162	433	\$966		80,729	\$88,802	\$89,767	49,428	5,324	\$378,345	\$288,577	\$3.56
19	15	136,904	2,405	\$5,363		134,499	\$147,949	\$153,312	104,755	8,657	\$659,335	\$506,023	\$3.70
20	16	206,737	865	\$1,929		205,872	\$226,459	\$228,388	146,201	13,890	\$1,018,295	\$789,907	\$3.82
21	17	70,518	582	\$1,298		69,936	\$76,930	\$78,227	42,587	5,002	\$348,491	\$270,264	\$3.83
22	605	12,479				12,479	\$13,727	\$13,727	7,309	892	\$61,629	\$47,902	\$3.84
23	606	65,539	21	\$47		65,518	\$72,070	\$72,117	56,339	4,259	\$333,067	\$260,950	\$3.98
24	622	5,063	102	\$227		4,961	\$5,457	\$5,685	5,729	315	\$27,461	\$21,777	\$4.30
25	9	148,397	3,536	\$7,885		144,861	\$159,347	\$167,232	105,042	11,495	\$813,845	\$646,612	\$4.36
26	616	6,929	1	\$2		6,928	\$7,621	\$7,623	3,648	576	\$37,857	\$30,234	\$4.36
27	601	13,205				13,205	\$14,526	\$14,526	11,656	948	\$72,536	\$58,010	\$4.39
28	18	115,516	575	\$1,282		114,941	\$126,435	\$127,717	97,576	8,650	\$645,962	\$518,244	\$4.49
29	98X	107,791	6,956	\$15,512		100,835	\$110,919	\$126,430	128,817	7,134	\$620,250	\$493,819	\$4.58
30	623	7,600	2	\$4		7,598	\$8,358	\$8,362	6,524	583	\$43,442	\$35,080	\$4.62
31	636	11,528	252	\$562		11,276	\$12,404	\$12,966	11,481	843	\$66,522	\$53,556	\$4.65
32	7	89,487			\$73,200			\$73,200	82,641	6,410	\$497,387	\$424,187	\$4.74
33	608	4,446				4,446	\$4,891	\$4,891	5,487	299	\$26,155	\$21,265	\$4.78
34	35	146,754	19,311	\$43,064		127,443	\$140,187	\$183,251	184,950	10,598	\$909,807	\$726,556	\$4.95
35	19	42,764	284	\$633		42,480	\$46,728	\$47,361	42,766	3,705	\$278,440	\$231,078	\$5.40
36	1 (1M)	93,252	1,608	\$3,586		91,644	\$100,808	\$104,394	79,090	8,706	\$615,540	\$511,146	\$5.48
37	6	117,214	153	\$341		117,061	\$128,767	\$129,108	133,530	9,843	\$775,770	\$646,662	\$5.52
38	91X	16,650	221	\$493		16,429	\$18,072	\$18,565	15,810	1,510	\$110,549	\$91,984	\$5.52
39	95X	45,854	15,832	\$35,305		30,022	\$33,024	\$68,330	76,285	3,407	\$322,940	\$254,610	\$5.55
40	96X	144,078	109,364	\$243,882		34,714	\$38,185	\$282,067	268,654	11,197	\$1,093,813	\$811,746	\$5.63
41	21	155,677	6,247	\$13,931		149,430	\$164,373	\$178,304	186,703	14,147	\$1,105,549	\$927,245	\$5.96
42	92X	54,678	20,145	\$44,923		34,533	\$37,986	\$82,910	103,175	4,377	\$424,243	\$341,333	\$6.24
43	625	6,914				6,914	\$7,605	\$7,605	10,760	582	\$51,055	\$43,450	\$6.28

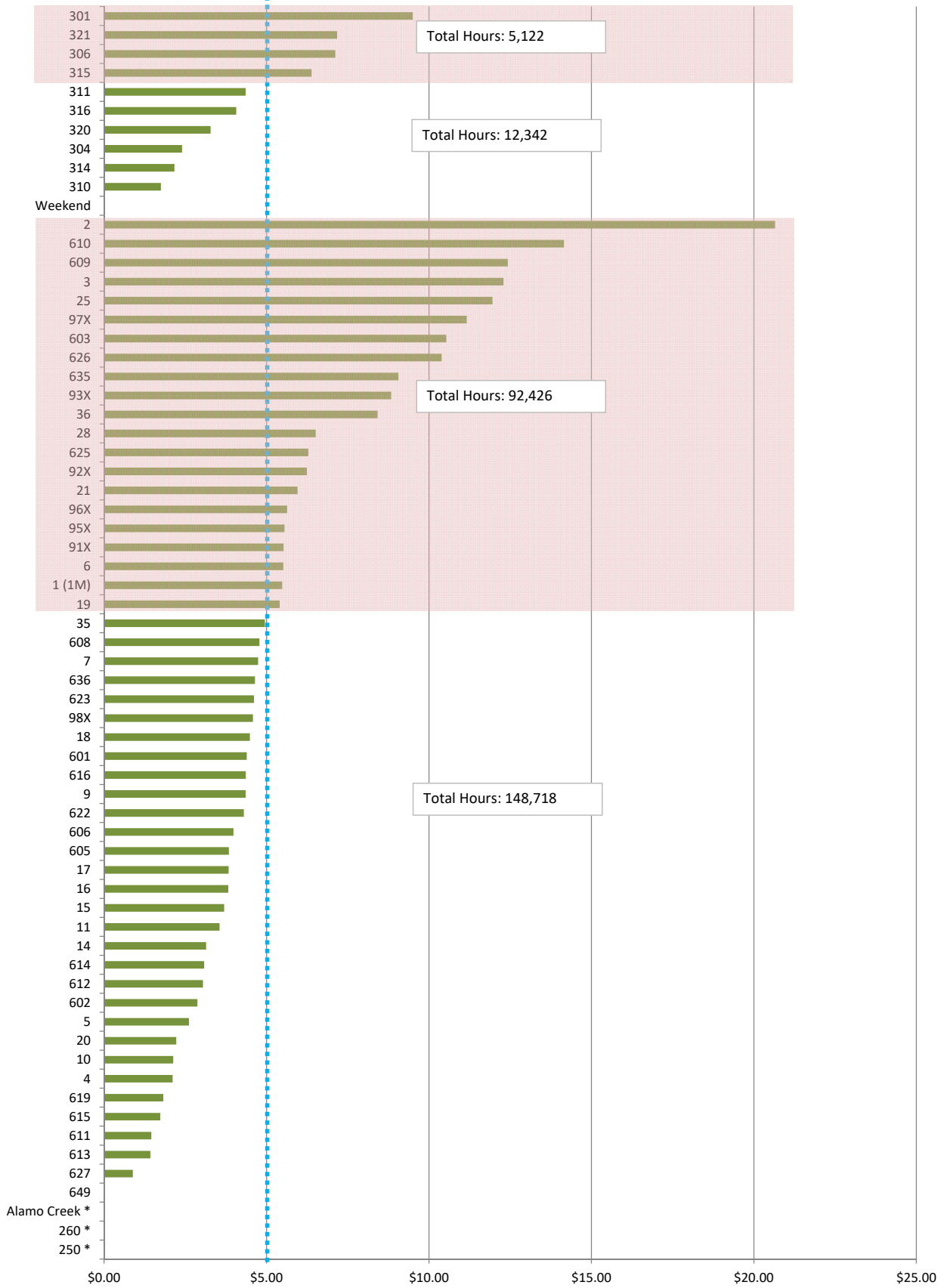
Routes Ranked by Cost/Passenger

	Route	Passengers	Bishop Ranch Passengers	BR Fares (\$2.23/pass)	Special Contract Revenues	Passengers Paying Their Fare	Fare from Everyone Else	Total Fares, Contract Fares, BR	Total Miles	Total Hours	Marginal Cost (1.81/mile & \$54.26/hour)	Cost Less Fares, Contract, BR	Cost per Passenger
44	28	81,533	353	\$787		81,180	\$89,298	\$90,085	102,382	8,030	\$621,019	\$530,934	\$6.51
45	36	69,278	7,637	\$17,031		61,641	\$67,805	\$84,836	125,982	8,112	\$668,185	\$583,349	\$8.42
46	93X	49,003	17,151	\$38,247		31,852	\$35,037	\$73,284	121,994	5,261	\$506,271	\$432,987	\$8.84
47	635	3,014	10	\$22		3,004	\$3,304	\$3,327	6,611	344	\$30,631	\$27,305	\$9.06
48	626	5,571				5,571	\$6,128	\$6,128	13,157	741	\$64,021	\$57,893	\$10.39
49	603	4,680				4,680	\$5,148	\$5,148	13,562	551	\$54,444	\$49,296	\$10.53
50	97X	26,224	19,704	\$43,940		6,520	\$7,172	\$51,112	79,751	3,676	\$343,809	\$292,697	\$11.16
51	25	17,526	310	\$691		17,216	\$18,938	\$19,629	38,320	2,945	\$229,155	\$209,526	\$11.96
52	3	18,987	20	\$45		18,967	\$20,864	\$20,908	33,926	3,555	\$254,300	\$233,392	\$12.29
53	609	969	2	\$4		967	\$1,064	\$1,068	1,967	176	\$13,110	\$12,042	\$12.43
54	610	1,294				1,294	\$1,423	\$1,423	3,200	257	\$19,737	\$18,313	\$14.15
55	2	4,598	23	\$51		4,575	\$5,033	\$5,084	16,181	1,304	\$100,043	\$94,959	\$20.65
Weekend													
1	250 *	1,063										\$0	\$0.00
2	310	50,116	640	\$1,427		49,476	\$54,424	\$55,851	23,875	1,849	\$143,541	\$87,690	\$1.75
3	304	49,727			\$27,058			\$27,058	12,162	2,076	\$134,683	\$107,625	\$2.16
4	314	61,090	259	\$578		60,831	\$66,914	\$67,492	27,416	3,033	\$214,214	\$146,722	\$2.40
5	320	20,288	117	\$261		20,171	\$22,188	\$22,449	8,463	1,357	\$88,924	\$66,475	\$3.28
6	316	33,416	232	\$517		33,184	\$36,502	\$37,020	26,493	2,304	\$172,962	\$135,943	\$4.07
7	311	22,500	354	\$789		22,146	\$24,361	\$25,150	16,429	1,723	\$123,232	\$98,082	\$4.36
8	306	11,586	2	\$4		11,584	\$12,742	\$12,747	17,739	1,007	\$86,729	\$73,982	\$6.39
9	321	24,110	950	\$2,119		23,160	\$25,476	\$27,595	37,450	2,421	\$199,137	\$171,542	\$7.11
10	315	5,977	68	\$152		5,909	\$6,500	\$6,652	7,259	670	\$49,511	\$42,859	\$7.17
11	301	6,406	25	\$56		6,381	\$7,019	\$7,075	6,820	1,025	\$67,943	\$60,868	\$9.50

Route	Cost per Passenger	Total Hours
Weekday		
250 *	\$0.00	
260 *	\$0.00	2,307
<i>Alamo Creek *</i>	\$0.00	2,560
649	\$0.00	308
627	\$0.89	385
613	\$1.42	307
611	\$1.45	587
615	\$1.73	255
619	\$1.82	314
4	\$2.11	9,832
10	\$2.13	12,760
20	\$2.22	14,759
5	\$2.61	5,485
602	\$2.87	1,292
612	\$3.04	416
614	\$3.08	396
14	\$3.14	10,442
11	\$3.56	5,324
15	\$3.70	8,657
16	\$3.82	13,890
17	\$3.83	5,002
605	\$3.84	892
606	\$3.98	4,259
622	\$4.30	315
9	\$4.36	11,495
616	\$4.36	576
601	\$4.39	948
18	\$4.49	8,650
98X	\$4.58	7,134
623	\$4.62	583
636	\$4.65	843
7	\$4.74	6,410
608	\$4.78	299
35	\$4.95	10,598
19	\$5.40	3,705
1 (1M)	\$5.48	8,706
6	\$5.52	9,843
91X	\$5.52	1,510
95X	\$5.55	3,407
96X	\$5.63	11,197
21	\$5.96	14,147

92X	\$6.24	4,377
625	\$6.28	582
28	\$6.51	8,030
36	\$8.42	8,112
93X	\$8.84	5,261
635	\$9.06	344
626	\$10.39	741
603	\$10.53	551
97X	\$11.16	3,676
25	\$11.96	2,945
3	\$12.29	3,555
609	\$12.43	176
610	\$14.15	257
2	\$20.65	1,304
Weekend		
310	\$1.75	1,849
314	\$2.16	2,076
304	\$2.40	3,033
320	\$3.28	1,357
316	\$4.07	2,304
311	\$4.36	1,723
315	\$6.39	1,007
306	\$7.11	2,421
321	\$7.17	670
301	\$9.50	1,025

Cost per Passenger < \$5



Cost per Passenger < \$10

